Amendments to the Specification

Please amend paragraph [015] of the Specification as follows:

[015] Figure 1 shows a multi-antenna system 100 that uses the antenna selection method according to the invention. In a transmitter 1, L_t data streams 101 are generated. These streams can be either different signals obtained through a space-time coder, i.e., in multiplexing transmission, or the same signal encoded with different weights, i.e., in diversity transmission. The streams are modulated 110 to passband RF signals. A selection switch 120 links these signals to L_t of the t branches 121 associated with the t transmit antennas ($t \geq L_t$) 131. In the new invention, the t passband branches 121 are transformed 130 by a $t \times t$ matrix operation $\mathbf{\Phi}_1$ before they are applied to the t transmit antennas, and passed through the channel 140.

Please amend paragraph [016] of the Specification as follows:

[016] At a receiver 2, the signals are received via the channel 140 by r receive antennas 151. The received signals are transformed 150 by an $r \times r$ matrix operation $\mathbf{\Phi}_2$, and L_r of the transformed signals are selected 160, where $L_r \leq r$. The selected signals 161 are demodulated 170 and further processed 180 in baseband for detection of the data streams 101. The concatenation of the L_t out of t switch and the $t \times t$ matrix operation $\mathbf{\Phi}_1$ can be viewed, and implemented, as a $t \times L_t$ matrix operation in both the transmitter and the receiver.

Please amend paragraph [024] of the Specification as follows:

[024] The system 100 with diversity transmission can be expressed by a linear ~~equation 1.~~ equation:

$$\vec{x}(k) = \mathbf{H}\vec{v}s(k) + \vec{n}(k) \tag{3}$$

where $s(k) \in C$ is the transmitting stream, $\vec{x}(k) \in C^r$ is the set of sample stacks of the complex-valued receiver data sequence. The total transmission power is constrained to P. The thermal noise $\vec{n}(k) \in C^r$ is a white i.i.d Gaussian random process with independent real and imaginary parts and variance $\sigma_n^2 \mathrm{I}_r$, and $\vec{v}$ is a t-dimensional transmitter weighting vector satisfying $\| \vec{v} \| = 1$. At the receiver, the received signals $\vec{x}$ are weighted (W) 152 with complex weights $\vec{u}^*$ and ~~added~~ summed ($\sum$) 153, to give a soft estimate of the transmitted symbol stream.